

Abstract

A sensor incorporating a phased heater array structure with a concentrator, separator and detectors for sensing the presence, identity and concentration of a mixture of fluids in a sample or other place. It may utilize an array of gas discharge devices, of chemi-sensors and of photo ionization sensors. The sensors may have control logic for the selection of variable portions and types of the heater elements for the concentrator and the separator. Detectors, the concentrator and separator along with the phased heater array may be integrated on a chip. Registers and the control logic may be integrated in a chip connectable to the chip containing the phased heater array structure via wire-bonds or solder bumps or z-axis conductive elastomers.